

**REMARKS**

This amendment is responsive to the Office Action mailed September 16, 2008. Reconsideration and allowance of the claims as set forth herein is earnestly requested.

**Status of the Claims**

The Office Action reports examination of claims 1-20.

Claims 1-4 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Dafni, U.S. Pat. No. 6,198,789 (hereinafter "Dafni").

Claims 5-9 and 17-19 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Kalender et al., "Dose reduction in CT by anatomically adapted tube current modulation. II. Phantom measurements", Medical Physics vol. 26 no. 11, pp. 2248-53 (1999) (hereinafter "Kalender").

Claims 10-12 and 20 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kalender in view of Gies et al., "Dose reduction in CT by anatomically adapted tube current modulation. I. Simulation studies", Medical Physics vol. 26 no. 11, pp. 2235-47 (1999) (hereinafter "Gies").

Claim 16 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kalender in view of Popescu et al., U.S. Pat. No. 5,867,555 (hereinafter "Popescu").

Claims 13-15 are indicated as containing allowable subject matter.

**Formal issues**

Applicants amend the specification herein as requested at Office Action page 2.

The clarifying amendment proposed at Office Action page 2 have been made, except where the relevant claim is canceled. However, the objection "Claims 2-4 and 15 are objected to by virtue of their dependencies" (Office Action page 2) is unclear to Applicants. Claims 2 and 3 are canceled herein, thus obviating those objections. If the objections to claims 4 and 15 are maintained in the forthcoming Office Action, Applicants respectfully request clarification of these objections.

**The claims present patentable subject matter  
and should be allowed**

**Claim 14**, which was indicated as containing allowable subject matter, has been placed into independent form including the limitations of base claim 1. **Claim 16** has been placed off of claim 14. For at least the foregoing reasons, it is respectfully submitted that claims 14-16 are in condition for allowance.

**Claim 5** has been amended to incorporate subject matter of dependent claims 8, 11, and 13 that are believed to recite allowable subject matter based at least on the articulation at Office Action pages 7-8. In particular, claim 5 now recites acquiring initial transmission tomographic imaging data of an associated imaging subject using an x-ray radiation source revolving around the associated imaging subject for an initial revolution of the radiation source using a preselected level of radiation generated by the x-ray radiation source; estimating a constant of proportionality between an x-ray current of the x-ray radiation source and attenuation of radiation raised to a selected power based on the initial transmission tomographic imaging data acquired in the initial revolution; performing tomographic imaging by acquiring transmission tomographic imaging data of the associated imaging subject using the x-ray radiation source revolving around the associated imaging subject; during the tomographic imaging, determining an estimated attenuation of radiation for an upcoming position or angular bin of the revolving radiation source based on attenuations measured at previous positions or angular bins of the x-ray radiation source; and prior to acquiring tomographic imaging data at the upcoming position or angular bin, adjusting a level of radiation produced by the x-ray radiation source by adjusting the x-ray current proportional to the estimated attenuation of radiation raised to the selected power using the estimated constant of proportionality.

For at least the foregoing reasons, it is respectfully submitted that claims 5-7, 9, 10, 12, and 17 are in condition for allowance.

**Claim 21** is a new claim that recites a method of helical CT imaging in which an x-ray source traverses a helical orbit relative to a subject, the method comprising: acquiring CT imaging data as the x-ray source traverses the helical orbit relative to the subject; determining an axial radiation attenuation from CT imaging data acquired previously at a point in the helical orbit about a half revolution away from a current position of the x-ray source; determining a baseline radiation

attenuation from CT imaging data acquired over a preceding at least one revolution of the helical orbit previous to the current position of the x-ray source; and modulating an x-ray current of the x-ray source at the current position of the x-ray source based on a combination of both the determined axial radiation attenuation and the determined baseline radiation attenuation.

Claim 11 is placed off of claim 21 and amended for consistency.

The method of claim 21 and of claim 11 are each disclosed in the specification at least at page 13 line 12-page 14 line 13 (see particularly Equations 12 and 13), with Fig. 5B showing an example.

The Office Action cites Popescu as allegedly disclosing a baseline radiation attenuation. Office Action at page 7. Applicants do not acquiesce to the assertion that the "modulation index" of Popescu corresponds to the baseline radiation attenuation recited in claim 21; however, in any event it is believed that none of the references, alone or in combination, disclose modulating a level of radiation produced by the x-ray source at the current position based on a *combination of both* an axial radiation attenuation determined as recited in claim 21 and a baseline radiation attenuation determined as recited in claim 21.

For at least the foregoing reasons, it is respectfully submitted that claims 4, 11, and 21-23 are in condition for allowance.

Based on the foregoing, allowance of each of claims 4-7, 9-12, 14-17, and 21-23 is earnestly requested.

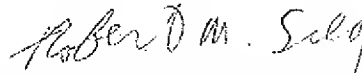
**CONCLUSION**

For the reasons set forth above, it is respectfully submitted that claims 4-7, 9-12, 14-17, and 21-23 (that is, all claims) present patentable subject matter. An early allowance of all claims is earnestly requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned at (216) 861-5582.

Respectfully submitted,

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